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Exercise and Gardening Programs as Tools to Reduce Community Violence

Julie A. Jacob, MA

As a teenager 20 years ago, Nicole Tillman practiced basketball with her team at Jesse Owens Park in south Los Angeles, but it was not a place she would choose to go if she didn't have to. The park was a magnet for gang members, and graffiti covered building walls.

"It was pretty scary," said Tillman, who still lives in the same south Los Angeles neighborhood and is now a mother of 4 children ranging in age from 2 to 16 years.

The park epitomized the scourge of community violence, which has long been viewed as a public health issue (<http://1.usa.gov/1LQFzxT>).

Community violence has health ramifications that go beyond violence-incurred injuries. The fear of violence hampers physical activity, and thereby health, as residents may be afraid to bike or visit neighborhood parks to walk and exercise, noted a 2010 report produced by the Prevention Institute in Oakland, California (<http://bit.ly/1JS7Mcf>), an organization that researches health and safety issues. Exposure to violence also increases a person's vulnerability to disease. For instance, people with asthma who have witnessed violence in their neighborhood are twice as likely to go to the hospital for their asthma compared with those who have not observed violence, and adults who were exposed to violence as children are more likely to develop mental health issues such as posttraumatic stress disorder

and depression and chronic diseases such as heart disease and diabetes (<http://bit.ly/1BYkhqa>).

"It has a weathering effect on the cardiovascular system and the body in general," said Anthony Iton, MD, JD, MPH, senior vice president for healthy communities at the California Endowment, who has researched the geographic distribution of crime and disease.

Parks Transformed

Today, Jesse Owens Park is a far more welcoming place than the grim zone it was in years past. Along with 5 other Los Angeles County parks that once were shunned by neighborhood residents fearful of encountering violence, the park is a hub of peaceful physical activity and socializing. The parks were rejuvenated in 2010 as part of the Los Angeles County Department of Parks and Recreation's Parks After Dark (PAD) program, which is run in conjunction with the Los Angeles County administration, Los Angeles County Department of Public Health, and law enforcement agencies and was modeled after Los Angeles' popular Summer Night Lights program (<http://bit.ly/1FSotxb>).

Three nights a week during the summer in the designated parks, children swim in pools and chase soccer balls across fields, teenagers play basketball, and people stroll through the park in organized walking groups and attend exercise

classes. Deputy sheriffs on duty ensure the safety of visitors and participate in the activities too (<http://bit.ly/1DfoPPj>). Tillman regularly takes her children to PAD nights at Jesse Owens Park, where they enjoy swimming, face painting, basketball, and other activities.

"There is so much for the kids to do, and it keeps the gang members away," she said.

A 2014 National Academy of Medicine discussion paper described PAD as "a promising new model for violence prevention and health promotion, rooted in cross-sector collaboration" (<http://bit.ly/1DjrBO6>). While not a cure-all, violence prevention programs like PAD and others that encourage the use of parks, offer fitness classes, or promote urban gardening can help strengthen a sense of community engagement, defined as *collective efficacy*, which is associated with lower rates of violence (Ahem J et al. *J Epidemiol Community Health*. 2013;67[2]:159-165).

"The idea of building communities that are walkable, bikeable, and green, designed for people to live in them, to exercise in them, to help them be fit—it aids in the violence reduction activity because it helps with mental health, it helps with community engagement, it helps with community cohesion," said Georges C. Benjamin, MD, executive director of the American Public Health Association.

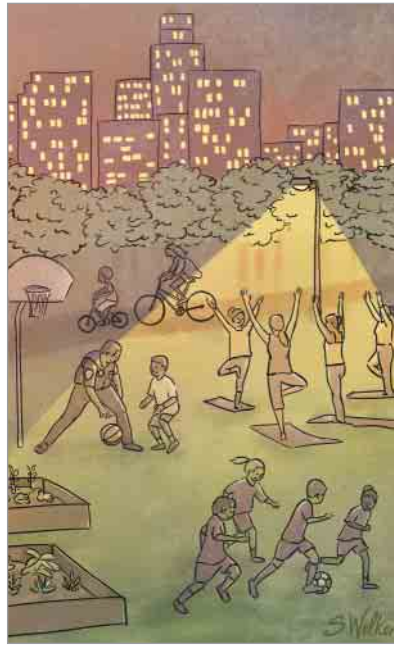
Since PAD began, serious and violent crime has decreased 32% between 2009

and 2013 during the summer months in neighborhoods surrounding 3 participating parks, while serious and violent crime has increased 18% during the summer months in similar neighborhoods near parks that are not part of PAD (<http://1.usa.gov/1ThphQT>). The crime rate in PAD neighborhoods continued to decline or level off in the fall and winter before spiking in the spring but still remained lower than comparison parks, said Kelly Fischer, MA, a staff analyst at the Los Angeles County Department of Public Health.

Like PAD, the Fitness Improvement Training Zone (FIT Zone) program in East Palo Alto, California, uses physical activity in parks as a violence prevention tool. Unlike PAD, which is led by the park district, FIT Zone is organized by the police department in a city of 29 000 residents that has a crime rate well above the national average (<http://bit.ly/1DetfGj>). At 2 local parks—chosen because of their high gunshot rates—police officers lead exercise classes, bike rides, walks, and volleyball games, while staff from a local health center give talks on healthy eating and wellness. The program's goals are to build trust between police officers and residents, strengthen community engagement, and increase park activity (<http://bit.ly/1NOVn2J>).

The Warren Institute at the University of California, Berkeley, School of Law analyzed gunshot data in both parks as measured by ShotSpotter technology from January 2009 to December 2013. The analysis found a decrease of 27% in shootings at the 2 FIT Zone parks combined, relative to a surrounding buffer zone and a control park. A separate institute analysis found a 58% decrease in shootings at the FIT Zone parks combined, not including a buffer zone. When the institute analyzed the data at the 2 parks separately, it determined the reduction in shootings was statistically significant at only 1 park (<http://bit.ly/1KPW1OL>). The report hypothesizes that shootings may not have significantly decreased at the second park because it was secluded and attracted fewer participants.

On the opposite coast of the United States, an obesity prevention program funded by the Centers for Disease Control and Prevention (CDC) called Racial and Ethnic Approaches to Community Health (REACH) provided a grant for the Mattapan Community Health Center in Boston to offer free fitness classes such as yoga, Zumba,



and kickboxing as a way to help neighborhood residents cope with violence- and trauma-related stress.

"It is helpful to have some place to go to get that anxiety and that hurt and frustration out," said Sharon Callender, RN, MPH, the center's family and community health services coordinator.

Planting Seeds of Trust

Urban gardening is another strategy to curb community violence by improving a neighborhood's sense of trust and investment in the neighborhood's common good (Teig E et al. *Health Place*. 2009;15[4]:1115-1122). Cleaning vacant lots and planting trees and plants may also reduce gun crimes and boost the residents' perception of safety in the neighborhood (Garvin EC et al. *Inj Prev*. 2013; 19:198-203).

According to the CDC, community gardening programs can provide opportunities to strengthen community ties and improve social well-being (<http://1.usa.gov/1DvuRpJ>).

"Crime Prevention Through Environmental Design (CPTED) is a promising strategy for preventing violence. CPTED focuses on reducing crime opportunities and on promoting positive social behavior, and community gardens are one component of this approach," said CDC spokesperson Julie Eschelbach, MA in an email.

In Denver, Revision, a nonprofit organization that promotes backyard gardening in underserved neighborhoods, conducted a

pilot project on using community gardening as a way to teach teenagers about neighborhood economics and peaceful ways to resolve conflicts. In 2011, Revision, using a grant from the Convergence Partnership, launched a youth violence prevention program. Over the course of 3 summers, 38 at-risk teenagers, referred to Revision from a gang prevention program, spent the summer planting, tending, and harvesting vegetables at Revision's urban farm, explained Eric Kornacki, Revision's cofounder and executive director.

Although Revision did not conduct a formal assessment of the youths' attitudes toward violence before and after the program, the staff observed the teenagers transforming over the course of the program from being kids with a skeptical attitude to enthusiastic gardeners and neighborhood advocates, he said.

"After having their hands in the soil, they became different kids for sure," said Kornacki.

Health Benefits

Violence prevention programs such as PAD and FIT Zone that use physical activity as a centerpiece, as well as community gardening programs, have the benefit of possibly helping participants become physically healthier, too. Tackling health and violence together in one program is appealing because it's an efficient use of limited resources, noted Larry Cohen, MSW, executive director of the Prevention Institute. "An important piece of the public health approach [to violence] is to get to a good solution that solves multiple problems."

Data from the PAD indicate that in 2014, 65% of participants did not meet CDC guidelines for weekly physical activity, and of those sedentary visitors, 80% engaged in physical activity at the park (<http://1.usa.gov/1NLQTd8>).

"It's been very successful, very popular," said Paul Simon, MD, MPH, director of chronic disease and injury prevention at the Los Angeles County Department of Public Health. "What's surprising is that it has become a focus point for a broader public health agenda."

Over the years, other organizations have joined PAD to offer health-related programs, such as healthy cooking classes and assistance with signing up for health insurance. PAD is also reaching out to

community physicians to encourage them to suggest a "park prescription" to their patients.

While the primary goal of the Mattapan Community Health Center program was stress reduction, the community health center also educated fitness class participants on healthy eating topics and referred them to the center's other health services, such as mammography screenings, said Callender.

Violence, in addition to being a barrier to physical activity, can make it harder for people to access fresh food, creating food deserts in these areas. Neighborhood residents are less likely to buy healthy food when they are fearful of walking or taking a bus to the grocery store, and supermarkets are less likely to locate in violent neighborhoods, noted Rachel Davis, the Prevention Institute's managing director.

Urban gardens can also help improve health by providing healthy food in neighborhoods that may otherwise lack grocery stores. The participants in Revision's violence prevention program in Denver, for

example, sold the produce they had grown at a farmer's market in the underserved neighborhood of Westwood, which currently does not have a comprehensive grocery store, explained Kornacki.

A few other examples of urban gardens that are growing fresh produce for underserved neighborhoods are the Growing Home program (<http://bit.ly/1iAbujX>) in Chicago's Englewood neighborhood and Alice's Garden in Milwaukee (<http://alicesgardenmilwaukee.com>).

Considerations for Success

Programs like PAD, FIT Zone, and urban gardening, although popular, do have the limitation of being resource-intensive endeavors. It costs about \$90 000 per park to run PAD, according to the Los Angeles County Parks and Recreation Department. Revision's violence prevention program ended after 3 years when the Convergence grant ended, and the free fitness classes at the Mattapan Community Health Center were discontinued because of a lack of funding.

Just like a garden, such programs must be nurtured over the long-term and coordinated with other violence prevention activities, said Cohen. "It's not going to be one thing. It's not like you put in a community garden, and suddenly the community is going to be completely safe," he said.

Despite the broad collaboration needed among disparate governmental and non-profit organizations, as well as the time and money required, programs like PAD are a useful addition to the violence prevention toolbox, Simon said.

"All of the research indicates that successful violence prevention programs require a comprehensive approach with multiple sectors," said Simon. "Our experience indicates that summer park programming can be a valuable piece of the puzzle, if well organized and well integrated with other community prevention efforts."

Tillman, for one, is sold on PAD's merits.

"It's something that is really nice for kids to do," she said. "They don't have to get involved with gangs. Everything about the program is awesome." ■

The JAMA Forum

Community Approaches to the Opioid Crisis

Howard Koh, MD, MPH

The abuse of opioids continues to have a devastating effect throughout the United States, as 2 recent studies highlight.

The first study, a national poll by the Harvard T. H. Chan School of Public Health and the *Boston Globe*, found that about 40% of respondents personally knew someone who had abused or misused prescription pain medicines such as hydrocodone in the past 45 years (<http://bit.ly/1JHYqtd>). Only about 45% believed that long-lasting treatment was effective for opioid dependency.

The second study, from the Centers for Disease Control and Prevention and the Food and Drug Administration (FDA), found that heroin abuse, traditionally more common among men and the poor, is now rising rapidly in groups such as women, the privately insured, and those of higher income (<http://1.usa.gov/1Fo8QtT>).

These findings represent just the tip of the iceberg. From 2001-2013, the annual

number of overdose deaths rose 3-fold for prescription opioid analgesics (to more than 16 200) and 5-fold for heroin (to more than 8200 deaths) (<http://1.usa.gov/1znaUDW>). Such trends parallel the steady increase in opioid analgesics to 259 million prescriptions a year, enough for each American adult (<http://1.usa.gov/1JFmWJg>).

People can readily access and misuse legal drugs in the medicine cabinet prescribed for others. Three-quarters of new users of heroin, a cheaper and more readily available opioid, initially began using prescription painkillers for nonmedical reasons. Researchers cite additional factors, such as aggressive pain treatment as a desired feature of quality care, availability of new formulations, pharmaceutical marketing, and previous underappreciation of addiction risk by professionals and public alike, as contributing to these trends.

Currently, nearly 2 million people abuse or are dependent on prescription opioids and



Howard Koh, MD, MPH

more than half a million abuse or are dependent on heroin (<http://1.usa.gov/1rpXmxJ>). Multiple drug use, involving alcohol and sedatives for example, can increase overdose risk. Further complicating the picture are HIV and hepatitis C associated with intravenous use.